

Node.js + MongoDB

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Hello

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Pre-requisites

- ⦿ Node.js >= 0.8.x
 - ⦿ <http://nodejs.org/download/>
 - ⦿ <https://github.com/visionmedia/n>
- ⦿ MongoDB >= 2.2.x
 - ⦿ www.mongodb.org/downloads
 - ⦿ <https://github.com/aheckmann/m>

Node.js

Node.js

- Evented I/O for V8 JavaScript

Node.js

- ⦿ Evented I/O for V8 JavaScript
- ⦿ Single threaded

Node.js

- ⦿ Evented I/O for V8 JavaScript
- ⦿ Single threaded
- ⦿ Asynchronous

Node.js

```
<?php  
$data = file_get_contents($file)  
// do stuff with data  
?>
```

Node.js

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$data = file_get_contents($file)  
// do stuff with data  
?>
```

```
var fs = require('fs')  
fs.readFile(file, function (err, data) {  
  // later, do stuff with data  
})  
// continues on here!
```

Node.js

```
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$data = file_get_contents($file)  
// do stuff with data  
?>
```

```
1 var fs = require('fs')  
2 fs.readFile(file, function (err, data) {  
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})  
3 // continues on here!
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Node.js

- callback based

Node.js

- ⦿ callback based
- ⦿ batteries excluded

Node.js

- ⦿ callback based
- ⦿ batteries excluded
- ⦿ npm
 - ⦿ <https://npmjs.org>

MongoDB

MongoDB

- Document database

MongoDB

- Document database vs Relational

MongoDB

• Relational

Product		
_id	name	created_at

MongoDB

• Relational



MongoDB

- ⦿ Relational

- ⦿ assembly required



MongoDB

- Relational
 - assembly required
 - app model != storage model

MongoDB

- ⦿ Data Model
 - ⦿ Documents

MongoDB

- ⦿ Data Model
 - ⦿ Documents
 - ⦿ JSON-like

MongoDB

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 - ⦿ BSON

MongoDB

- ⦿ Data Model
 - ⦿ Documents
 - ⦿ JSON-like
 - ⦿ BSON
 - ⦿ basically typed JSON

MongoDB

- Data Model

- Documents

- JSON-like

- BSON

- basically typed JSON

- number, string, binary, array, etc

MongoDB

☞ Documents

```
{  
  _id: ObjectId("5168ed87461efc0000000001")  
  , name: "The Sky Is Falling T-shirt"  
  , created_at: ISODate("2012-10-12T16:16:13.964Z")  
}
```

MongoDB

☞ Documents

```
{  
  _id: ObjectId("5168ed87461efc0000000001")  
  , name: "The Sky Is Falling T-shirt"  
  , created_at: ISODate("2012-10-12T16:16:13.964Z")  
  , props: [{ key: anything, val: someValue }]  
}
```

MongoDB

- Documents
- Ad-hoc query support

MongoDB

- ⦿ Documents
- ⦿ Ad-hoc query support
- ⦿ Secondary indexing

MongoDB

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- ⦿ Dynamic schemas

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- *No TRANSACTIONS

MongoDB

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- Ad-hoc query support
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- Dynamic schemas
- Data modeled directly to application
- *No JOINs
- *No TRANSACTIONS (but rich \$atomic update operators)

MongoDB

- ⦿ Continued...
 - ⦿ Replica-sets
 - ⦿ Sharding

MongoDB

- document
 - properties
 - values

MongoDB

- collection
 - document
 - properties
 - values

MongoDB

- database
 - collection
 - document
 - properties
 - values

MongoDB

- mongod
 - database
 - collection
 - document
 - properties
 - values

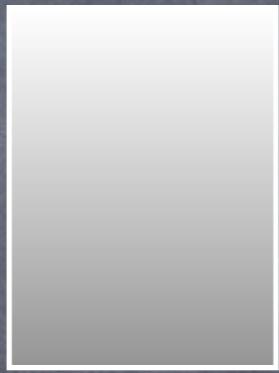
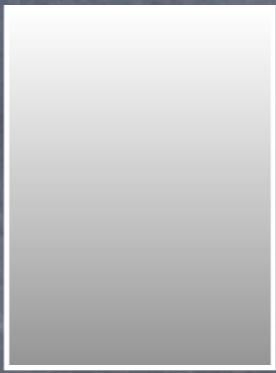
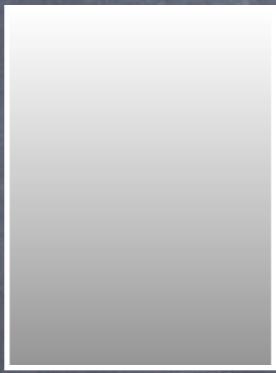
MongoDB

- replica-set
 - mongod
 - database
 - collection
 - document
 - properties
 - values

MongoDB

- sharded cluster
 - replica-set
 - mongod
 - database
 - collection
 - document
 - properties
 - values

Replica Sets



Replica Sets

p

s

s

Replica Sets

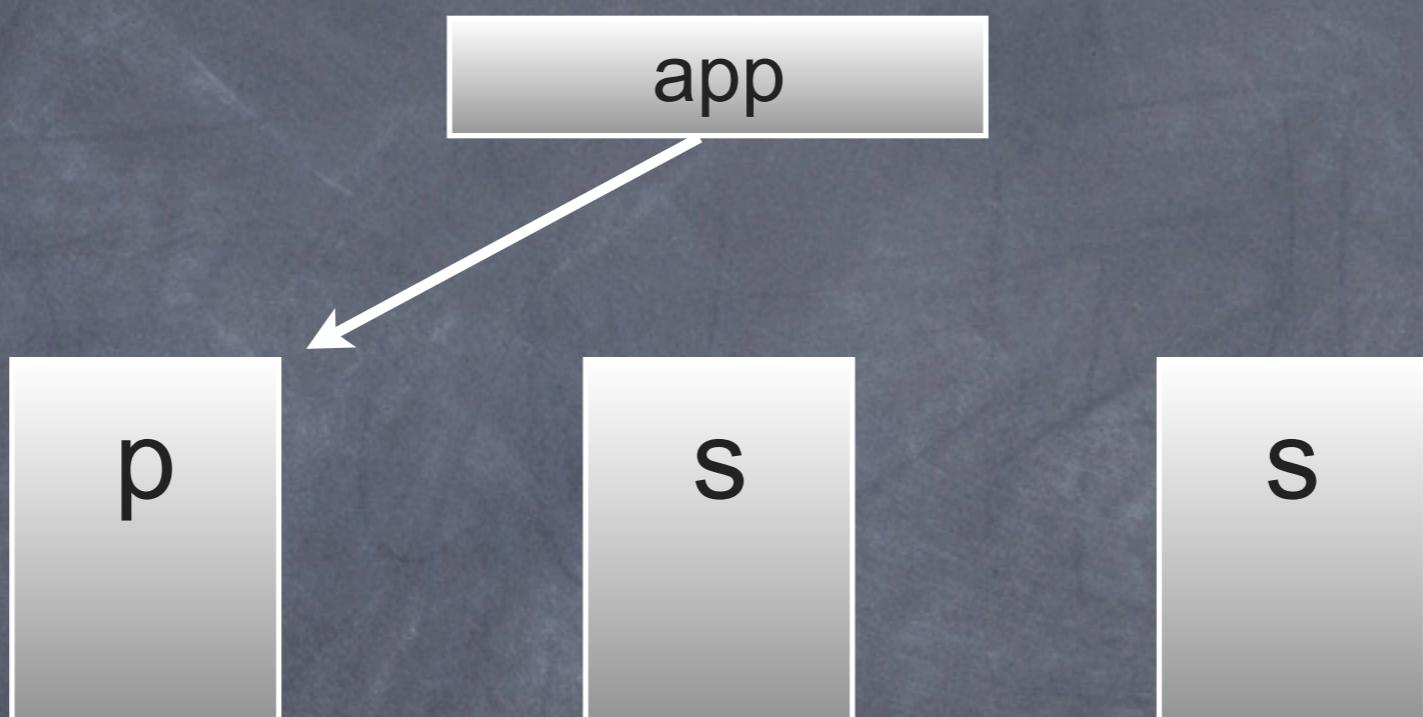
app

p

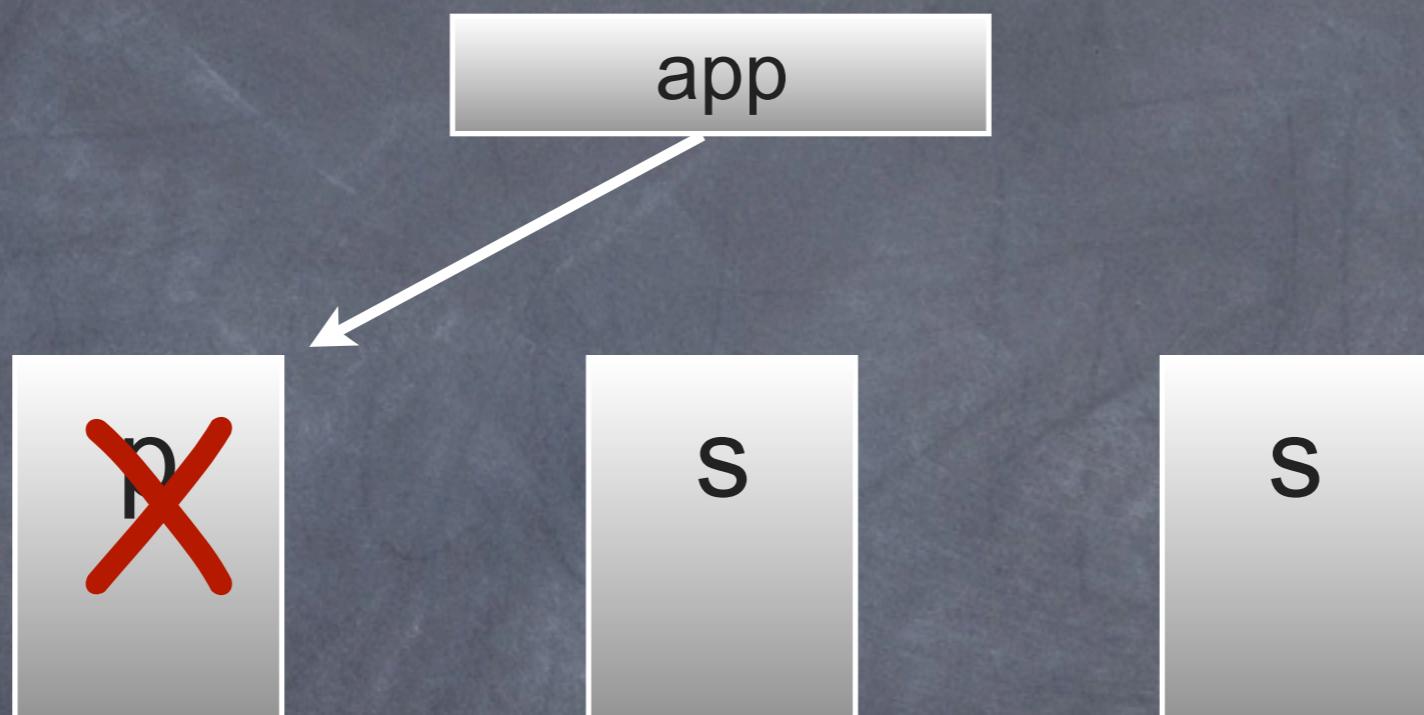
s

s

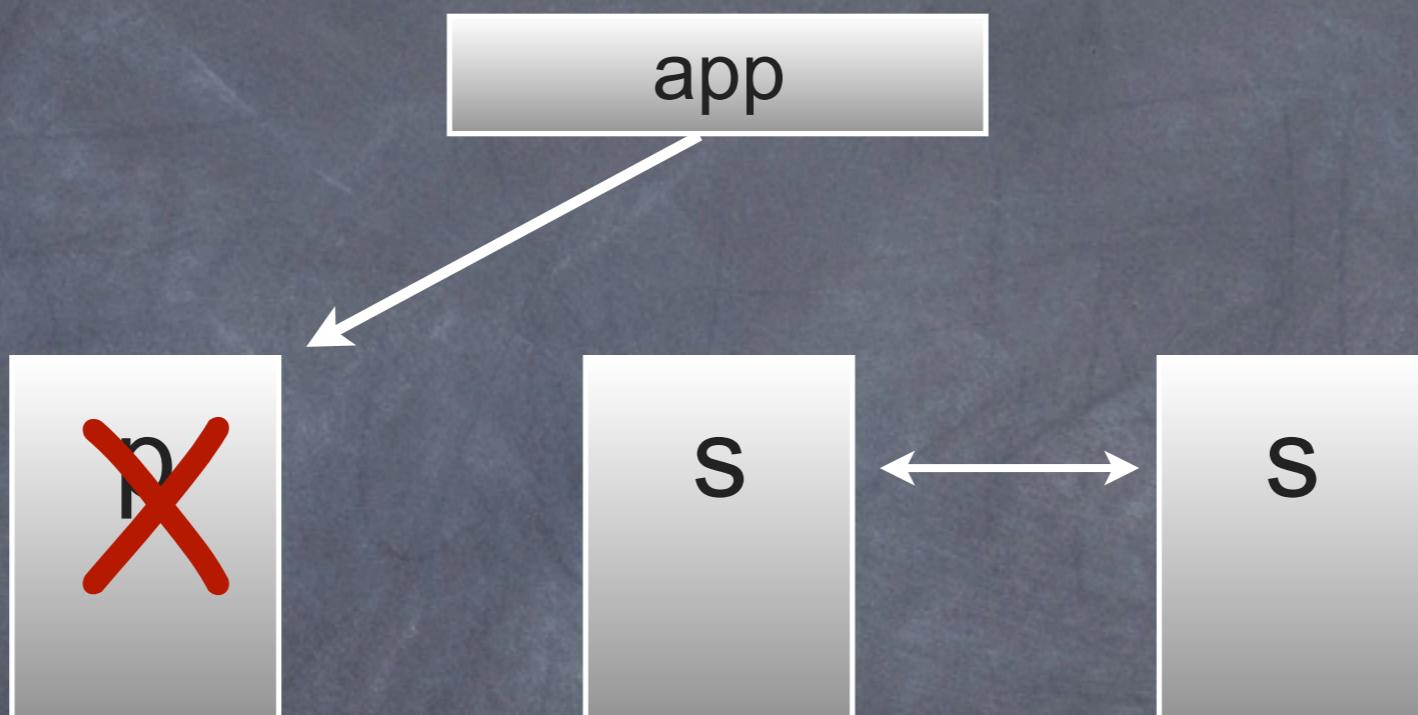
Replica Sets



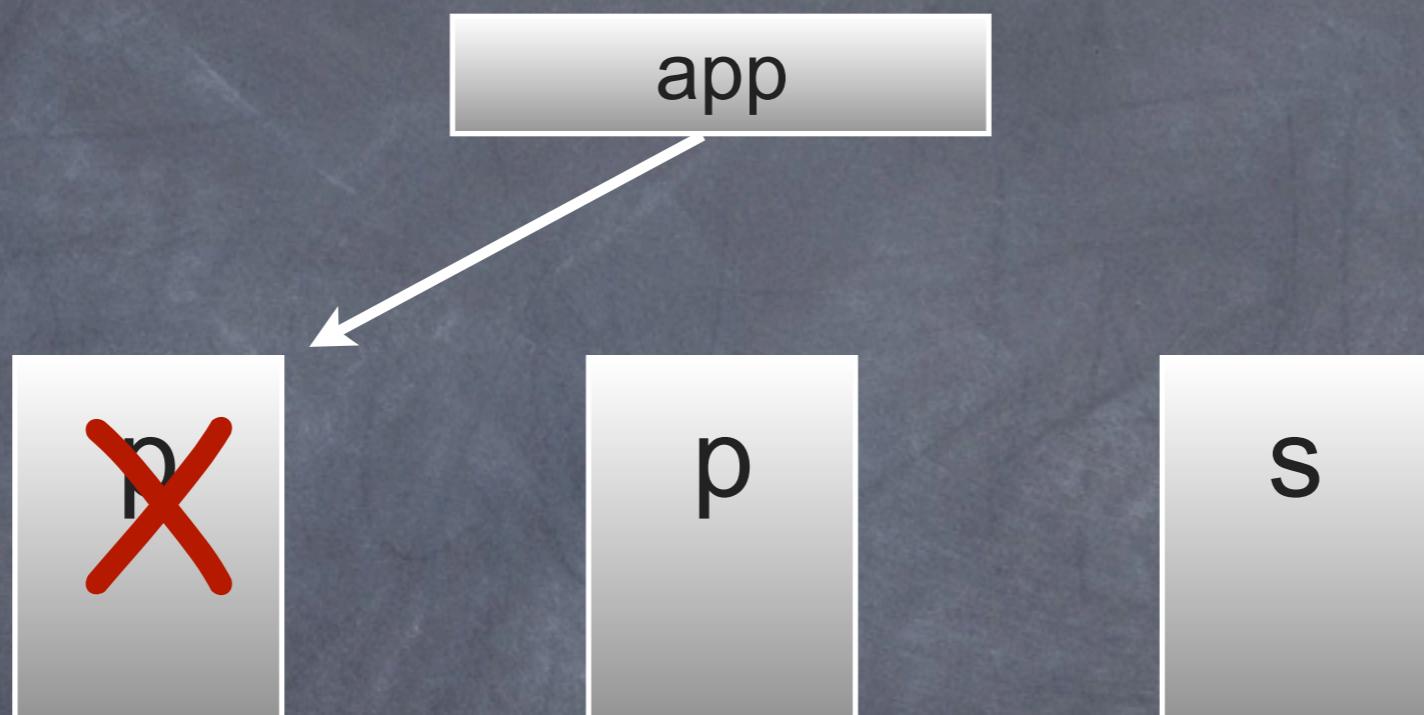
Replica Sets



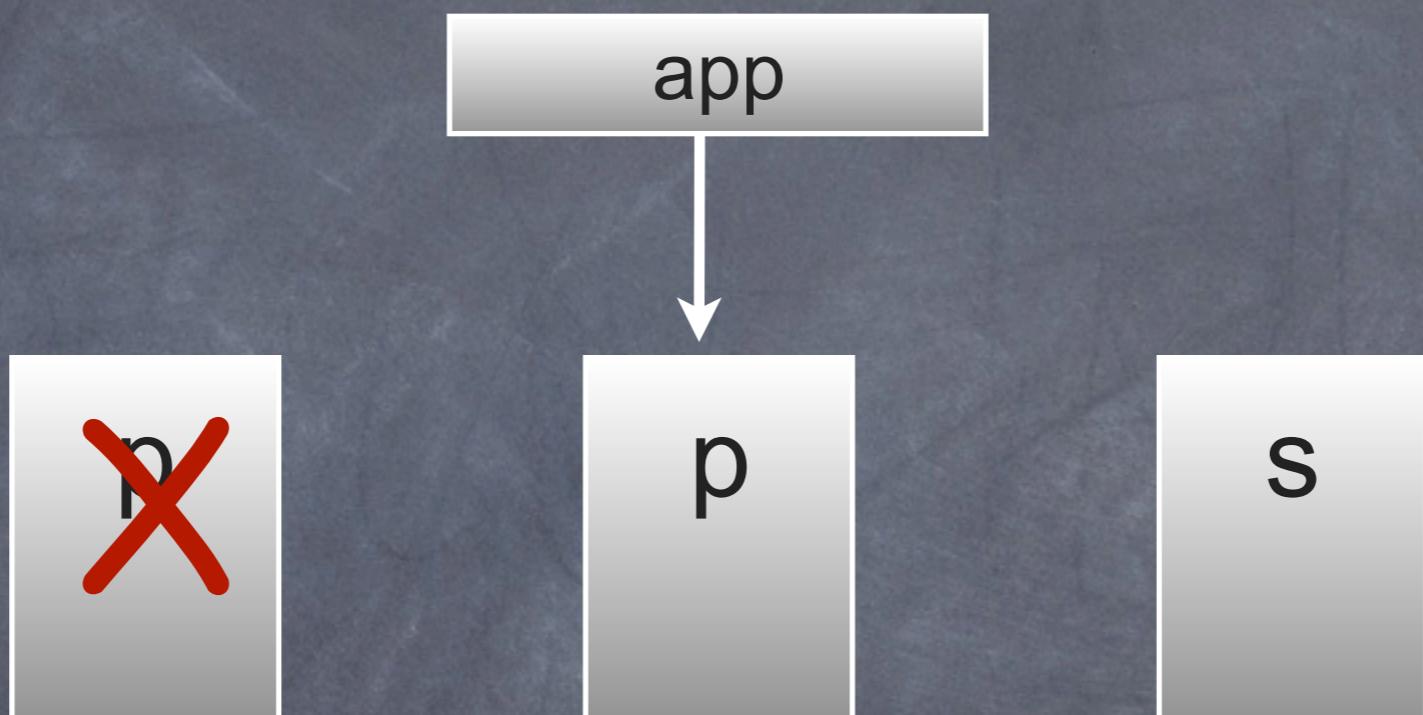
Replica Sets



Replica Sets



Replica Sets



Replica Sets

